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Claims

Please amend the claims as follows.

1. (canceled)
2. (canceled)
3. (canceled)
4. (currently amended) ~~An~~ The vector error diffusion method to convert an image comprising input pixels having values into an output image comprising output pixels having values, the method comprising the steps of:
 - determining a modified input pixel value based upon:
 - an input pixel value;
 - a fraction of an error value obtained in a previous step;
 - determining for said modified input pixel value a quantization set consisting of quantization values, each quantization value corresponding to setting an available output pixel value combination of a cluster of pixels, said output pixel value combination resulting in a density value change in said output image;
 - selecting a quantization value out of said quantization set based upon said modified pixel value;
 - calculating an error value that depends on the modified input pixel value and the selected quantization value;
 - wherein the error value takes into account the density value change of an area in the output image corresponding to more than one pixel. of claim 16 wherein N=1 corresponding to one-dimensional vectors of a scalar greyscale image.
5. (original) A method according to claim 4 wherein said cluster comprises at least two pixels.
6. (original) A method according to claim 4 wherein the pixels corresponding to the area in the output image coincide with the pixels of said cluster.
7. (original) A method according to claim 4 wherein said density value changes are taken into account in determining said available calculated quantization values of said quantization set for said pixel.

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8. (original) A method according to claim 4 wherein said density value changes are taken into account in determining said modified pixel value for said pixel.
9. (original) A method according to claim 4 wherein the clusters of pixels are unequal in size for at least two possible quantization values.
10. (original) A method according to claim 4 wherein the cluster size is adjusted depending on the input pixel value.
11. (original) A method according to claim 4 wherein the cluster size is adjusted depending on the local contrast of the pixels surrounding the input pixel.
12. (original) A method according to claim 4 wherein said method for error diffusion halftoning further comprises a halftone dot distribution alteration step in low and high intensity image regions.
13. (original) A method according to claim 4 wherein the method for error diffusion halftoning is a multilevel halftoning method.
14. (original) A method according to claim 4 wherein the output value of the pixel is set to the corresponding minimum or maximum output value if the input pixel value is the minimum or maximum possible input value.
15. (previously presented) A method for halftoning a color image comprising plural color separated images wherein at least one of the color separated images is halftoned using a method according to claim 4.
16. (currently amended) A vector error diffusion method to convert an image comprising input pixels having vectors into an output image comprising output pixels having vectors, the method comprising the steps of:
 - determining a modified input pixel vector based upon:
 - an input pixel vector;
 - a fraction of an error vector obtained in a previous step;
 - determining for said modified input pixel vector a quantization set consisting of quantization vectors, each quantization vector corresponding to an available output pixel vector combination of a cluster of pixels, said output pixel vector combination resulting in a density value change in said output image;

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selecting a quantization vector out of said quantization set based upon said modified pixel vector;

calculating an error vector that depends on the modified input pixel vector and the selected quantization vector.

wherein: the error vector takes into account the density value change of an area in the output image corresponding to more than one pixel,

and wherein the input pixel vectors, the output pixel vectors, the modified input pixel vectors, the error vectors, and the quantization vectors being N-dimensional, N being an integer value greater than zero.

17. (currently amended) Method according to claim 16 wherein N>1 and the overlap between halftone dots in different separated images is taken into account.

18. (original) Method according to claim 16, in which the plural separated images represent plural color separations.

19. (original) Method according to claim 17, in which the plural separated images represent plural color separations.

20. (canceled)